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Submissions
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UNISON SUBMISSION ON ENABLING MASS PARTICIPATION IN THE ELECTRICITY MARKET

Introduction

Unison welcomes the opportunity to submit on the Electricity Authority's consultation paper, *Enabling Mass Participation in the Electricity Market.* This paper represents a continuation of discussion generated from the *Implications of Evolving Technologies for Pricing of Distribution Services* consultation paper that the Authority released at the end of 2015.

Unison has also read and contributed to the ENA's submission. We support its analysis and recommendations.

The Authority has identified that the focus of the paper is:

> "We have a comprehensive work programme focusing on removing regulatory barriers and enabling mass participation. The focus of this paper is the 'gaps' in that programme and what further work needs to occur."

Unison supports the Authority getting "ahead of the game" in terms of ensuring that regulatory settings are such that consumers can participate in the energy market where it is efficient for them to do so. But we also think that there is not significant urgency to develop an accelerated or wide-ranging programme of work to enable new market platforms or make significant changes to New Zealand's existing electricity markets. For one matter, it is essential that the Authority focusses on completing the TPM Review as it is creating significant levels of regulatory uncertainty, but more importantly, the Authority needs to avoid impeding progress with network pricing reform.

Together, with electricity retailers, network businesses are embarked on a significant transformation project to reform mass-market network pricing. This is an important step which will provide a platform for retailers to engage with consumers much more with their use of electricity. For the first time for most consumers, there will be a regular time dimension to pricing which will provide opportunities for consumers to make choices about the service they want. For example, with any of "time of use", "capacity" or "demand-based" delivery prices, consumers will face a price signal of the value of:

1. Shifting elements of use from peak to off-peak periods;

2. Storing electricity in off-peak periods for use in peak periods;
3. Using other technologies or fuels; and/or
4. Doing nothing.

While the Authority has entitled its paper "Enabling mass participation in the electricity market" and the Authority's mandate is to regulate only the electricity market, Unison submits that the Authority needs to think more widely about the context of "mass participation". In Unison's view the Authority needs to consider the wider energy market. Electricity use is a derived demand driven by a host of factors including lifestyle aspirations, environmental consciousness, income levels, prices and relative prices, availability of alternative energy sources or other means of achieving desired outcomes (e.g., substituting gas central heating) and other factors. Viewed through that lens, consumers already participate significantly in the energy market: new technologies will simply enable them to do so in a different way.

It is also relevant to note the research on consumer attitudes to electricity which shows that most consumers do not understand the electricity market, nor concepts like peak demand, and have more valuable things to do with their time than think about electricity. In this context, further mass participation is likely to be best enabled as integral parts of technology and through automation, rather than direct participation. It is important to consider this aspect in considering further enhancements to market design and regulatory rules. For example, it would seem unlikely that consumers would be particularly interested in becoming individual traders in the various components of the electricity market (energy, reserves etc), because the individual transaction costs would be too high relative to the benefits. However, provided that intermediaries can aggregate individual loads or small-scale generation, then this could be sufficient to achieve efficient participation.

Within that context, for there to be participation in the electricity market there needs to be the following key features:

1. Exposure to efficient prices;
2. Market access;
3. Access to data and information (e.g., metering information);
4. Efficient standards for participants to meet (these may be technical or financial (e.g., prudential requirements); and
5. A robust legal environment to protect the competitive landscape.

It is evident that most of these features already exist in the New Zealand market context, or there is work underway within the Authority's existing work programme to refine or evolve many these areas. We have reviewed the Authority's 2017/18 work programme and consider that it is largely appropriate in the context of emerging technologies.

We comment on those features we think are most relevant in the following sections.

1. Exposure to efficient prices

Energy/retail prices

It is clear that the energy component of electricity prices can be readily communicated to consumers. Retailers such as Flick have demonstrated that this is possible and we understand that the model can be extended so that energy injections (e.g., from solar or batteries) can be

similarly exposed to spot prices. We are unable to comment on whether energy prices are at competitive levels or not, but (adopting the Authority's language) we do note the "privileged position" of the large-scale, vertically integrated generator-retailers and their potential to impact on competitive outcomes in the electricity spot market and market for financial products (e.g., hedges). It will be important for consumer confidence that there a level playing field and open access to financial products to enable participants (or their intermediaries) to manage their electricity spot price risks.

From a retail pricing perspective, it is also apparent that residential consumers do struggle to make meaningful comparisons between retailers. The Powerswitch website, for example, provides a useful to tool to make price comparisons. But the challenge of making like-for-like comparisons in future will become harder, not easier, when the industry moves from the comparatively simple fixed and flat variable pricing approaches to time varying prices. Comparisons become even more difficult when electricity retail prices are bundled with aligned products such as home energy management systems, solar and batteries. We have already seen some energy solutions providers make claims about potential savings that are highly unlikely to be achieved. As an independent market regulator, the Authority should ensure it uses its education powers effectively to assist consumers to make sound decisions.

Recommendation:

1. **the Authority should consider if enhancements can be made to its "What's my number?" campaign or other means to assist customers make informed decisions about electricity providers, including those providing bundled service offerings.**

Network price signals

Unison considers that network pricing reform – implementing cost-reflective and service-based pricing – is an important enabler of mass participation and can complement the potential exposure to consumers to time-varying energy price signals. Historically, delivery prices to consumers have only very weakly signalled the value of network use at different times (e.g., controlled rate prices, day/night prices), but with the progressive roll-out of smart meters, and advances in consumer-side technologies, there is clearly significant future scope for consumers to be more involved in the electricity market and respond to time varying network delivery prices.

Given the findings of consumer research to date, our suspicion is that this involvement in the electricity market is, for the great majority of consumers, likely to be on a passive basis (like hot water control). For example, through the use of fixed timers, consumers could respond to retail/network price signals by doing things like:

1. Setting heat pumps to "pre-heat" before peak pricing periods;
2. Setting electric vehicles to charge during the night;
3. Delaying dishwashing to off-peak periods.

In Unison's view, the industry-led initiative to reform network prices will provide an important initial platform for consumer participation, and should enable retailers and energy service providers to develop innovative offerings to consumers (e.g., packages of solar, battery, home energy management and grid supplied electricity).

While technically there may be some degree of "inefficiency" associated with pre-programming such device use, since not every evening period will have high energy prices or network congestion, but there will still be a significant long-term efficiency pay-off from such "set and forget" behaviour, with little consumer inconvenience.

The Australian perspective is also relevant to reference here with regard to the approach the Authority takes to encouraging and enabling mass participation. The Australian Energy Market Commission (AEMC) has recently published the *Distribution Market Model Project: Draft Report*[1]. The Draft Report sets out characteristics of a potential evolution to a future where investment in and operation of distributed energy resources is 'optimised' to the greatest extent possible. AEMC discusses the promotion of a *"…competitive 'distribution' market for the provision of services enabled by distributed energy resources [e.g. batteries, solar etc] means that markets in response to consumer decision-making, determine the most efficient outcome"*[2]. One of the key enablers of this is "*the* ***successful implementation of cost-reflective network tariffs…providing consumers with more accurate price signals on investing in and using distributed energy resources***"[3]. The AEMC Chairman stated in the related press release, that: *"If, as expected, distributed energy resources continue to become smarter and cheaper, we will see an acceleration in consumer uptake. We need to put consumers in the driving seat – giving them the choice about how to optimise the value of their household's or business's energy investments"*[4]

Unison has not fully considered every aspect of the Australian Regulator's Draft Report; however, we support one of their key conclusions – that network pricing is essential to providing consumers with more accurate price signals to invest in and use 'distributed energy resources'.

Pricing impacts on "non-participants"

One matter that is not on the Authority's work programme, and which we believe has not been dealt with effectively by the Authority in its analysis to date, is the impact of the Electricity (Low fixed charge tariff option for domestic consumers) Regulations 2004 ("LFC Regulations). The flip side of a mandatory low level of fixed charge is that it requires high variable charges, which will not always be appropriate as it will over-signal the benefits of avoiding whichever type of variable charge is put in place. A significant proportion of network costs are not capacity-related, or vary only weakly with changes in capacity. Accordingly, many actions to avoid network variable charges largely result in shifting cost recovery to other consumers.

While it is tempting to think about how participants with access to new technologies may be able to participate better in the market, help deliver cheaper solutions and place competitive pressure on prices, Unison submits that it is also important to consider how such participation could have detrimental effects if regulatory settings, such as the LFC Regulations, are imperfect. We illustrate this with a scenario to complement the Authority's case study.

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[1] Australian Energy Market Commission (6 June 2017). *Distribution Market Model Project: Draft Report.* http://www.aemc.gov.au/getattachment/25e63b7d-8c28-441b-b315-2d438f285d81/Draft-report.aspx.
[2] AEMC (6 June 2017). *Information Sheet on Distribution Market Model Project: Draft Report* (page2). http://www.aemc.gov.au/getattachment/04f785cb-c745-433c-b2be-6029e6d7cada/Information-sheet-Draft-report.aspx
[3] Ibid.
[4] Australian Energy Market Commission (6 June 2017). *Distribution Market Model Project: Draft Report.* http://www.aemc.gov.au/News-Center/What-s-New/Announcements/Distribution-market-model-project-draft-report?utm_medium=email

Scenario: the world of a future electricity consumer

Evolving technologies are already changing consumers' electricity related decisions and the impact will increase. This scenario provides a hypothetical but plausible illustration of the world of many electricity consumers in the not too distant future.

On a cold evening (following the fourth, freezing, wet, cloudy day in a row) John was driving his 13 year old petrol vehicle home. With a tear in his eye, he looked enviously at the warm glow of houses with lights on, some with charging cables snaking out to the electric cars parked on driveways. John was sad that once again he would have to tell the children that there could be no hot meal or heaters on that night as the price of "peak power" had risen by another 10 percent. Life just seemed so unfair.

A few months earlier, his neighbour Finn had told him gleefully that with his new battery and solar panels, he would just about have free power all year. Because he was a low user, apart from a small 30 cents per day charge, he would hardly ever pay for electricity because he could store up power from his panels during the day or from the grid if it was cloudy and wet for use in the evening peaks. What's more he was even going to be paid $150 a year if he allowed his battery to be discharged when the network company needed it. John lamented that even though he had managed to keep his power bill down to about $2,000 a year, this was only because of increasing efforts to be frugal. He too was a low user, but not through any real choice.

John had once tried shopping around electricity retailers to see if he could get a better deal, but all retailers were the same. They said that with overall power consumption dropping, but still needing to keep the same generation and lines infrastructure for cold, wet days it meant that prices had to keep going up. They tried to offer John a solar and battery package, which he could pay off as part of his monthly power bill, but as he was one of the 60% of New Zealanders in rental accommodation, it wasn't an option. His landlord had kindly offered to have solar panels installed for a small increase in the weekly rent, but there was no space for a battery. John's friends advised him not to get just panels, because day time power was already cheap and besides he was never home during the day.

John was confused. He didn't understand why power prices kept going up while all these new technologies like batteries and solar panels were being touted as helping reduce power bills. Maybe it was helping people like Finn who could afford all the new technologies so they could go nearly off-grid, but to him it seemed like it was better in the old days.

We have constructed this narrative as the flip-side to the Authority's case-study of Finn. While it should not be read as implying that new consumer-side technologies should be limited or prohibited, it is intended to highlight the challenges that material uptake of solar and batteries could have on those consumers less able to access such technologies and the burden it may create on the technology have-nots. The important point is that New Zealand will not be better off if we have "mass participation" for the sake of it, but that the electricity market-based rewards for such participation need to be as reflective as possible of the cost savings or value that is provided by that participation.

The scenario highlights that the LFC Regulations create strong price incentives for consumers to act to avoid high variable prices. The Authority seems minded that this is not a problem and/or that cost-reflective, service-based prices set by distributors will be all that is required to avoid inefficient investment. But the Authority does not seem to have systematically considered what high variable prices (e.g., in the form of TOU prices, demand or capacity prices) would have on incentives. In the short-term, introduction of peak-related signals may improve price signals against which the benefits of solar can be evaluated. However, as prices of batteries and solar fall, (which appears to be the general expectation), such high variable price signals would lead to the kinds of outcome described in the scenario above.

Unison's view is that it is desirable for network fixed charges to increase to ensure that consumers pay for the service they receive (e.g., people like Finn, who effectively pay nothing for their grid connection under the LFC Regulations). The longer the LFC Regulations continue to suppress an efficient level of fixed charges, the harder it will become to reform them as more people like Finn make it become less palatable to enact change. In our view, the case for reform of the LFC is compelling and urgent.

Recommendations:

2. **The Authority continue to support industry-led reform of mass-market network pricing**

3. **the Authority support a review of the LFC Regulations to ensure they are fit for purpose. MBIE to undertake a review of the LFC**

A further legislative barrier to exposing customers to efficient prices and enabling efficient participation are the mechanisms in the Electricity Industry Act (("EIA") sections 105-108) for providing alternative supplies to rural consumers and limitations on pricing to those customers.

Services to customers on long rural spurs are the most costly services provided by EDBs. Accordingly, the greatest near-term opportunity for "network support" services provided by alternative sources of supply would be to transition customers on such spurs to alternatives. However, under the relevant provisions of the EIA a distributor can only propose alternative sources of supply, and there is nothing requiring consumers to accept the proposal or assist (e.g., by providing roof-space for solar panels or a place to locate a battery). Moreover, even if all other consumers on a spur agreed to a proposal for alternative supplies, a single consumer could hold out to retain a network connection, making the entire proposal non-viable even if it were the most efficient solution. Our interpretation of section 113 of the EIA is that EDBs could not use price to incentivise customers to switch to alternatives, as it ostensibly threatens regulation if EDBs sought to lift rural charges materially above urban charges.

Recommendation:

4. **the Authority and/or MBIE should undertake a review of sections 105-108 and 113 of the EIA to assess whether they remain fit-for purpose, given the evolving technology landscape.**

2. Market access

Peer to peer trading

The Authority queries whether it needs to take further actions to facilitate peer-to-peer trading. Unison notes that physical peer-to-peer trading cannot occur, as electricity injected into the grid flows according to the path of least resistance, not to a pre-determined destination. In addition, physical peer-to-peer trades need not occur, as financial peer-to-peer trading can nominally achieve the same outcome.

As financial peer-to-peer trading already occurs, Unison submits that the only possible issue for the Authority to consider is whether there would be benefits from permitting multiple traders at an ICP where consumers could financially trade electricity to one party (e.g., peer-to-peer solar sales at prices they nominate), with another party providing the balance of electricity purchases. We are not persuaded that the potentially significant transaction costs associated with reconciling multiple traders at an ICP would be worth the benefits (compared to an intermediary providing a nominally equivalent function), but we support the Authority's current work programme to examine the issue.

Open access to networks

The Authority dedicates significant attention to whether existing open access arrangements at a network level may need to change, raising a number of possible activities that distributors or Transpower could undertake to limit opportunities for others or otherwise reduce efficiency. In general, we found the discussion pejorative, unhelpful in facilitating a meaningful discussion and narrow in its scope (for example, by not recognising the constraint provided by competition law on anti-competitive behaviour).

The Authority proposes in the consultation paper that contracting third parties to deliver network services would enable mass participation and help to lower overall electricity prices through competition to provide network support services. Unison notes that load management (e.g. ripple control) and Transpower's demand management are contracted services that are indeed working well. This functionality could also be used for batteries in homes. It is not clear, therefore, what the Authority needs to change for this to be enabled, as the market is already exploring and implementing these solutions.

We also note the trial being undertaken by Wellington Electricity and Contact, for example, as an initial test of how new consumer-side technologies might impact on network usage and their potential benefits. Our own analysis, and extensive discussions with several battery providers, has highlighted that such technologies are still too expensive relative to the total benefits that they may bring by an order of magnitude.

While we think that batteries and more active demand-side management are still some way off in terms of price and capability to deliver network support services, we do agree with the Authority that an open access platform will be important in enabling alternative sources of supply. We already operate an open access network and provide access on equal terms to our retailers, and indeed anyone else that wanted to use our network platform to provide services to end-users.

We see that, in time, arrangements will evolve so that third parties can provide network support services. We agree with the Authority that distributors need not own the equipment used to

provide network support, or potentially have direct control of that equipment. However, we do note that for network support services to be effective substitutes for network investment they will need to have the same reliability characteristics as network equipment or the ripple control system. The Authority's example of Rolls Royce renting, rather than selling engines as an analogy for contracting services out is rather too simplistic. An airline would be unlikely to rely on Rolls Royce if 1,000 different parts manufacturers were involved in the real-time operation of its jet engine!

Unison submits that the Authority should not under-estimate the technical complexity of managing what have become known as "Distributed Energy Resources" ("DER") to deliver an equivalent network service. In Unison's view, it is questionable how far in advance network businesses should invest in developing the technical capacity to manage such resources, given uncertainty about likely uptake and use of such resources in New Zealand, especially given the significant flexibility and scale of ripple control that already exists.

Nevertheless, when DER become cheaper, Unison submits that the Authority should recognise that the intent of Part 4 regulation (and/or the consumer ownership model) is to incentivise cost-effective, efficient delivery of the network service. Under price or revenue cap regulation, Unison is incentivised to meet its regulated quality performance targets at least cost. This is why we have invested in a smart grid, which is on track to lower our costs over the longer term as we improve the utilisation and life expectancy of our assets. In future, subject to the issue we raise below, if it becomes cheaper to deliver the network service by procuring "network support" from third parties or consumers directly then we would be similarly incentivised to do so. We expect that in countries with high rates of solar penetration, such as Australia, there will be significant learning opportunities as to how to most effectively manage and procure DER to assist in delivering network services.

An issue that has come to our attention recently, however, is that under the Commerce Commission's Part 4 regime, the Incremental Rolling Incentive Scheme ("IRIS") does create an incentive to favour network investment over operating expenditure. This is because the opex IRIS penalises operating expenditure relatively more than an equivalent capital expenditure under the capex IRIS. Accordingly, an EDB is incentivised by the DPP/Input Methodologies to own rather than procure. Accordingly, the Authority should not expect price-regulated EDBs to procure network support services until the 2020 reset as this would put EDBs at a relative financial disadvantage.

Recommendation:

5. The Commerce Commission should review the regulatory settings for the recognition of capex and opex and the IRIS schemes to ensure neutrality between ownership and procurement.

As we note in the introduction to this section, the Authority has ignored the constraint offered by competition law on anti-competitive behaviour (e.g., by preventing third parties from providing alternatives). Together with the incentives created by Part 4 regulation, with suitable modifications to the IRIS mechanisms, we do not perceive that there is a strong case for preventing distributors from participating (directly or through subsidiaries) in other parts of the electricity supply chain. The constraints on retailing and generation beyond certain limits before

it is mandatory to implement arm's length separation under the Electricity Industry Act also provide credible constraints on inefficient entry by distributors into new markets because ultimately the experience of new entrant retailers shows that significant scale is required to be successful.

Unison supports the ENA's submission that structural regulation (e.g., under Part 3 of the Electricity Industry Act) is appropriately the domain of MBIE and should be considered by policy-makers, rather than the Authority.

Access to data and information

Consumer access to information, tools

As we noted earlier in this submission, for consumers to make informed choices about their electricity use, they will need access to effective tools, such as Powerswitch. But such tools will need to keep up with market developments. It will no longer be sufficiently accurate for consumers to enter information about annual use, but information will be required about load profiles to enable accurate comparisons. We therefore support the Authority's initiatives to enable consumers and third parties to access consumer data to assist in making informed decisions.

The potential for bundling of aligned products (e.g., solar and battery packages) will further increase the challenge of making informed comparisons, but we think it will be important for the Authority, as an independent market regulator to ensure such components can be factored into the comparison tools. This is particularly important as consumers are potentially making long-term commitments to providers, which may see them unable to switch retailers for 15-20 years until the products are paid off. Relating to this point, we think the Authority should monitor developments in the retail contract area to ensure that consumers are not subject to arrangements where consumers are locked into contracts, but the retailer can vary the terms of the electricity retail price even if the price of the monthly battery rental, for example, is locked in place.

Recommendation:

6. **The Authority should monitor retail contracts to ensure consumers are not disadvantaged by long-term agreements.**

Access to information on network development opportunities

Unison recognises that in order for external parties to provide network support services, information is required to enable those parties to evaluate the scope of those opportunities. Information is already provided in EDB's asset management plans, but we note the comments made by ERANZ to the Commerce Commission that this information is not readily accessible and is too technical. We understand that the Commerce Commission is considering amendments to the Information Disclosure regime so that information on network development opportunities can be easier to access, which we support. It is inevitable, however, that the information on opportunities for network support will be technical, and network support services will need to meet the networks' technical requirements to ensure a safe, reliable supply of electricity. Unison submits that if retailers wish to become providers of network support then they will need to develop a level of technical understanding to enable them to enter the market.

Concluding comments

New Zealand has an enviable electricity market, with high levels of renewable generation, a well-structured market and significant flexibility on both the supply-side (e.g., ability to ramp up hydro generation) and demand-side (ripple control of hot water loads). Our assessment is that while new technologies such as batteries and solar offer significant potential, they are currently very expensive. To put it in context, Unison's average investment per consumer is around $5,000 and this investment will last 40 years. A home battery costs of the order $7,000 to $10,000, with an expected lifetime of, perhaps, 10 years. Accordingly, it seems unlikely that network support services from batteries will play a large role in efficiently avoiding further network investment in the near to medium term, except in areas where there are high costs to serve (e.g., rural spurs).

In that context, we think the most valuable focus for enabling efficient mass participation is through network and retail pricing reform, so that consumers are exposed to the relative merits of consuming in peak and off-peak times. We think there is a strong case for observing the experiences in markets like Australia where high solar uptake and climate change drivers will create opportunities for network support. There are likely to be complex technical issues to work through, particularly in coordinating the actions of small-scale DER to meet network operating requirements.

While we support taking low-cost steps to support the development of further participation in the market, our assessment is that the Authority's current work programme adequately addresses the issues confronting the New Zealand market. We do not believe there is a case for any accelerated programme to make significant changes to the electricity market or develop new platforms given the current and near-term state of new technologies.

For any questions on the points raised in this submission, please contact Roanna Vining Regulatory Affairs Analyst, by phone (06) 873 9329 or email Roanna.Vining@unison.co.nz.

Yours sincerely

Nathan Strong

GENERAL MANAGER, BUSINESS ASSURANCE

Attached: Appendix A – Unison Responses to Submission Questions

Appendix A – Unison Responses to Submission Questions

Question	Unison Response
1. What is your view on the potential competition, reliability and efficiency benefits of more participation?	Unison agrees that there are likely to be benefits across all three limbs as a result of further consumer engagement in the electricity market. But we also caution that participation should not be pursued for its own sake. Our analysis has identified that consumer technologies are still comparatively expensive compared to grid delivered electricity, but we expect alternatives to become much less expensive in the near to medium term. The industry's key challenge is to ensure that marginal price signals to consumers are at effective in signalling the marginal benefits arising from such participation. Network pricing reform is important in that respect, but we also consider there is an urgent case for reform of the LFC Regulations to ensure that variable price signals do not over-signal the merits of avoiding use of grid electricity.
2. What is your view of the opportunities to promote competition and more participation in the electricity industry?	Unison considers that there are opportunities to promote competition and more participation in the industry. The main example we see currently is for network pricing reform to provide a platform for increased consumer engagement and this should be the industry and Authority's main focus.
3. What other issues might inhibit efficient mass participation? Please provide your reasons.	Inefficient price signals, system capabilities and access to accurate data are several inhibitors to efficient mass participation that Unison discussed in the covering submission letter.
4. What is your view of the opportunities for network businesses to obtain external help to provide aspects of the network service using competition or market mechanisms?	We believe that there are likely to be opportunities in the future for external provision of network support services, but at this point it is too difficult to assess what is likely to be the best arrangement for procuring such services, given the requirement on networks to ensure the safe, reliable supply of electricity. If network operators are to contract with third parties offering network support services through dispatchable storage, small scale controllable generation and demand management, then there will be complex technical and coordination issues to manage, potentially requiring the creation of distribution system operators. We think New Zealand can learn from overseas markets as such platforms develop. In our view, New Zealand need not lead in this area, given the already significant ripple control capability that exists and flexibility on the supply-side. As noted above, we think the best near-term opportunity for network alternatives is in the provision of services to remote rural customers on long spurs. However, the EIA may require modification to better enable such solutions.
5. What do you think are the main challenges to be dealt with to	Reform of network pricing is key, as discussed in our covering submission letter. The authority also

increase the use of competition in supplying network services? What are your reasons?	needs to ensure that capture of and access to accurate data is available to parties (e.g. open access markets and data). We believe that some improvements can be made to make it easier for third parties to understand the network development requirements that may create opportunities for network support. This is an information disclosure issue, which we understand is being considered by the Commerce Commission.
6. What is your view on whether open access is required and what would be the elements for an effective open access framework?	Unison agrees with the Authority that open access is required, but notes that and there is already an open access framework in place (governed between the Authority and the Commerce Commission and Part 3 of the Electricity Industry Act).
7. How effective are the existing arrangements for open access? What are the problems?	Unison does not consider that there are necessarily any problems with the existing arrangements for open access in terms of the framework for distributors[5].
8. What type of distributor behaviours and outcomes should the Authority focus on to understand whether changes are required to support open access?	See the response to question 7.
9. What changes to existing arrangements might be required to enable peer-to-peer electricity exchange?	Unison considers that P2P trading is potentially a good area to focus on to increase mass participation. The ability to have two retailers allocated to one ICP is one arrangement Unison has discussed in our covering submission letter that would potentially enable P2P financial exchanges. However, there may be significant transaction costs associated with this, that may outweigh the benefits. We support, however, the Authority considering this as part of its work programme.
10. What are the costs and the benefits of enabling peer-to-peer electricity exchange?	As peer to peer trading already exists at a financial level, we are unsure what additional changes would be required to enable peer-to-peer trading. As electricity cannot physically be transported from one participant to another, unless they fill up a battery and transport the battery to the other participant, we do not believe that the Authority should change the market rules to enable a physical transaction that cannot occur in reality.
11. What is your view of the possibility for, and impact of, any current or future blurring of participant type? What are your reasons?	No comment.
12. What types of participation are or might be prevented because the party is not recognised as a	No comment.

[5] Summarised in paragraph 5.5 of the consultation paper.

participant? What are the potential impacts?	
13. What challenges might new forms of generation, such as virtual power plants, or small and dispersed generators, face in entering the market?	It is clear that consumers can already access the market via retailers, who act to lower the costs of entry. Such generators can be exposed to spot prices or be paid a fixed price for their generation. It is unclear that there is any problem in this area.
14. What changes might be required to the rule book to facilitate the emergence of virtual power plants or demand response?	No comment.
15. Would the functioning of the market for hedges and PPAs and the availability of finance be improved if there were greater transparency of long-term prices and greater standardisation of terms and conditions for long-term contracts?	No comment.